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MEMOIR OF THE LATE JOHN HENRY GURNEY.

To the great regret of his many friends, this well-known ornithologist, after some months of failing health, passed peacefully away, in his seventy-first year, on the 20th April last, at Northrepps, near Norwich.

To our readers the name of John Henry Gurney is "a household word," for, as many no doubt are aware, he helped to found 'The Zoologist' five-and-forty years ago, and from 1846, when, in conjunction with the late Mr. W. R. Fisher, he published in these pages (pp. 1300, 1324, 1373, 1393), "An Account of the Birds found in Norfolk," he continued to the last to give to this Journal his encouragement and support.

His friend and neighbour, Mr. Thomas Southwell, of Norwich, has obligingly placed at our disposal some biographical notes, of which we are glad to avail ourselves, and which we do not doubt will be acceptable to our readers. From him we learn that Mr. Gurney was born at Earlham Hall in 1819, and married Mary Jary, daughter of Richard Hanbury Gurney, Esq., of Thickthorn, by whom he leaves two sons, Mr. J. H. Gurney, who now succeeds to the family estates, and Mr. Richard H. J. Gurney, of Brighton. In 1854 he entered Parliament as member for King's Lynn, his colleague being Lord Stanley (the present Earl Derby), and sat for that borough till 1865, when he resigned his seat. He was a Justice of the Peace for the county of Norfolk, the senior member of the Norwich Bench, and also a magistrate for the borough of Lynn.

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As an ornithologist, Mr. Gurney was a recognised authority, both in Europe and America, more especially on Raptorial birds, and the magnificent collection in the Norfolk and Norwich Museum owes its existence almost entirely to his energy and liberality. We believe we are correct in saying that at a time not long since the collection of Raptorial birds in the Norwich Museum was unequalled, not excepting that of the British Museum, and even now there are many type specimens and some rarities which are not to be found in the national collection, as well as a larger series of several of the species from various localities. To these, by means of collectors abroad, and by his personal influence with other ornithologists, it was Mr. Gurney's constant study to make additions, and the annual reports of the Museum show that, although of late years such additions, owing to the completeness of the collection, were more and more difficult to obtain, scarcely a year passed without his energy being rewarded with some new species. Mr. Gurney was not only a collector, but was from his youth a keen observer of birds, and a naturalist in the truest sense of the word. At one period of his life he carefully studied the Mollusca of the county, and subsequently, during frequent visits to the coast, added largely to the knowledge of the fishes of Norfolk—a subject at that time much neglected, and the Museum contains many interesting specimens contributed by him. His connection with the Museum commenced at a very early age, and an entry in the presentation book of that society shows that on the 25th November, 1828, "Master J. H. Gurney" was the donor of a female Sparrowhawk and a Ring Dove. From that time to the end of his life, Mr. Gurney was a constant contributor to its collections in all departments, and it is probable that nineteen-twentieths of the birds of prey there bear the name of J. H. Gurney as their donor. In this institution Mr. Gurney was associated with Bishop Stanley, the Rev. W. Kirby, Professor Sedgwick, Richard Lubbock, Dawson Turner, and others. In 1849 he was chosen its President in succession to the Hon. and Very Rev. Dean Pellew, and in 1869 was elected permanent President. In November, 1861, his portrait, by Sir Francis Grant, was placed in the British Bird Room at the Museum, in recognition of his great services. In 1852 he delivered a course of lectures on Ornithology, in St. Andrew's Hall, which

were largely attended, and greatly stimulated the study of his favourite science in the county. Mr. Gurney was elected a Fellow of the Zoological Society in the same year, 1852, and was one of the founders, in 1859, of the British Ornithologists' Union, to whose publication, 'The Ibis,' he was a frequent contributor to the last, and upon the formation of a similar society in the United States he was appointed one of the first foreign honorary members. He was elected an honorary member of the Norfolk and Norwich Naturalists' Society, at its formation in 1869, and took a lively interest in its publications, to which he was a frequent contributor.

The most important of his published works is the volume on the 'Birds of Damara Land and the adjacent countries of South-West Africa,' which he prepared and edited, in 1872, from the MS. notes and letters addressed to him by the late Charles John Anderson, and which continues to be the standard work of reference on the Ornithology of that portion of the great African continent.

But prior to the appearance of this volume, Mr. Gurney had published 'A Sketch of the Collection of Raptorial Birds in the Norwich Museum' (12mo, London, no date), and 'A Descriptive Catalogue of the Raptorial Birds in the Norwich Museum. Part I.—Serpentariidæ, Polyboridæ, Vulturidæ' (8vo, London, 1864); while some years later—namely, in 1884—he brought out his very useful 'List of the Diurnal Birds of Prey, with references and annotations,' of which a notice appeared in 'The Zoologist,' 1884; p. 280.

Next in importance are his numerous contributions to the 'Proceedings of the Zoological Society' and to 'The Ibis,' amongst which may be specially noted his papers on the Ornithology of South Africa, and particularly of Natal, founded upon collections made by Mr. E. L. Layard, Mr. Thomas Ayres, and others, and his critical reviews of the volumes of the British Museum Catalogue of Birds, published as these volumes from time to time appeared.

The following list of papers and short communications from his pen, although not complete, will furnish a tolerably accurate view of the nature of his researches.

His earliest printed communication seems to have been published in the first volume of 'The Zoologist,'—i. e. in 1843,—

and relates to the occurrence of the Red-winged Starling at Barton Broad, near Norwich (Zool. 1843, p. 317). This was succeeded by a great number of short notes, such as the following:—

On the occurrence of the Red-legged Hobby near Norwich. Zool. 1843, p. 350.

Note on the Honey Buzzard. 1844, p. 491.

Lesser Forked-beard, *Raniceps trifurcatus*, at Cromer. 1844, p. 532.

Red-crested Whistling Duck on Horsea Mere, Norfolk. 1844, p. 576.

Nest of the Long-eared Owl. 1844, p. 655.

The Opah, or King-fish, on coast of Norfolk. 1844, pp. 679, 769.

Red-necked Phalarope in Norfolk. 1846, p. 1552.

Spanish Bream at Sheringham. 1846, p. 1555.

At length we come to—

An Account of Birds found in Norfolk. By J. H. Gurney and W. R. Fisher. Zool. 1846, p. 1300—1324, 1373—1398.

This was the first paper of real importance from his pen, and was an advance upon Messrs. Sheppard and Whitear's "Catalogue of Norfolk and Suffolk Birds," published in the 'Transactions of the Linnean Society,' in 1825 (vol. xv. pp. 1—62). It included 277 species, of which 81 were said to be residents, and 196 either regular or occasional migrants.

The Royal Society's 'Catalogue of Scientific Papers' hardly does justice to Mr. Gurney's industry and acumen as an ornithologist, for in the list there given of his publications, the first ten years of his work are altogether passed over, and the earliest communication of his which is noticed bears date 1853. Now although a great many of the unnoticed communications are brief, and relate chiefly to the appearance of rare birds and fishes in Norfolk, some of them at least are important, as intimating the occurrence of certain species in England for the first time, while others have a value on account of the original observations which they contain. As an example we may instance the "Note on the changes of plumage which occur periodically in the male birds of several different species of Ducks," Zool. 1851, p. 3116. Nine species of ducks were under observation for twelve months, and the list was drawn up with the view of showing the date of the commencement and completion of each moult in each species; the species being arranged in the order of the commencement of the first change.

Following the Royal Society's 'Catalogue' and 'Supplement,' we find a list of forty-four papers by Mr. Gurney printed between 1853 and 1872. These are :—

Anecdote of the power of fascination as exercised by a Fox, with some remarks on the exercise of a similar power by other predaceous animals. Zool. 1853, pp. 4049, 4051.

Note on a Bird and on a Quadruped, both found in Natal, and both said to prey upon Serpents. Zool. 1858, pp. 6267, 6268.

List of Birds received from Ibadan, in Western Africa. 'Ibis,' 1859, pp. 152, 153.

List of a collection of Birds from the Colony of Natal, in S.E. Africa. 'Ibis,' 1859, pp. 234—251.

List of Birds of Prey from Beyrouth. 'Ibis,' 1859, pp. 389—391.

Note on Pel's Owl, *Scotopelia Peli*. 'Ibis,' 1859, pp. 445, 448.

Note on the Eggs of the Eared Vulture and the Wedge-tailed Eagle. 'Ibis,' 1860, p. 171.

On Birds collected in the Colony of Natal, in S.E. Africa. 'Ibis,' 1860, pp. 203—221.

On some additional species of Birds received in collections from Natal. 'Ibis,' 1861, pp. 128—136.

An additional list of Birds received from Natal. 'Ibis,' 1862, pp. 25—39; 149—158.

Remarks on the Lesser Buzzard of South Africa, and its congeners. 'Ibis,' 1862, pp. 361—363.

Remarks on *Aquila Desmiersii*, J. Verreaux. Proc. Zool. Soc. 1862, pp. 145—146.

A list of British Birds found in South Africa. 'Zoologist,' 1863, pp. 8675—8677.

On the Kestrel of Madagascar, *Tinnunculus Newtoni*. 'Ibis,' 1863, pp. 34—37.

A fifth additional list of Birds from Natal. 'Ibis,' 1863, pp. 320—332.

On *Accipiter Stevensoni*, a new species of Hawk from China. 'Ibis,' 1863, pp. 447—450.

Note on *Aquila Barthelemyi*, Joubert. 'Ibis,' 1864, pp. 339—340.

Additional lists of Birds from Natal. 'Ibis,' 1864, pp. 346—361; 1865, pp. 263—276; 1868, pp. 40—52, 460—471.

An additional list of British Birds found in South Africa. 'Zoologist,' 1864, pp. 9247—9248.

A list of Birds collected in Damara Land by Mr. C. J. Andersson. Proc. Zool. Soc. 1864, pp. 1—11.

On a new species of Harrier, *Circus Wolfi*, from New Caledonia. Proc. Zool. Soc. 1865, pp. 823—824.

- Note on the voracity of the Bornean Crocodile, *Crocodilus biporcatus*, Cuv. 'Zoologist,' 1867, pp. 878—879.
- Notes on Mr. Layard's 'Birds of South Africa.' 'Ibis,' 1868, pp. 135—181, 253—271.
- Note on *Circus spilonotus* and *C. melanoleucus*. 'Ibis,' 1868, p. 356.
- First arrivals of Spring Visitors observed at or near Minehead, Somersetshire. Zool. 1868, p. 1293.
- Departures and arrivals of Migratory Birds observed in Cornwall and Devonshire. Zool. 1868, p. 1454.
- On the departure of the Swallow from Devonshire in 1868. Zool. 1868, p. 1479.
- Notes on the Birds of Prey of Madagascar and some of the adjacent Islands. 'Ibis,' 1869, pp. 443—454.
- On a Raptorial Bird from Damara Land: *Macheirhamphus Anderssoni*. Proc. Zool. Soc. 1869, pp. 117—118.
- Stray Notes on Norfolk and Suffolk Mammalia. Trans. Norfolk Nat. Soc. 1869—70, pp. 22—26.
- On the southern range of the European Merlin. Zool. 1870, p. 2221.
- Note on the eastern range of the European Merlin. Zool. 1870, p. 2304.
- Remarks on *Aquila n硯oides*. 'Ibis,' 1871, pp. 247—248.
- Remarks on certain species of Abyssinian Birds. Proc. Zool. Soc. 1871, pp. 147—149.
- On the Sea Lion of Southern California. Zool. 1871, pp. 2493—2494.
- Bustards in Northumberland. Zool. 1871, p. 2510.
- Ornithological Notes from the vicinity of Torquay during the winter of 1870—71. Zool. 1871, pp. 2629—2631.
- Late occurrence of the Tufted Duck in Devonshire. Zool. 1871, p. 2645.
- Ornithological Notes from South Devon. Zool. 1871, p. 2679.
- Note on the young of the Hermit Crab. Zool. 1871, p. 2685.
- Departure of Summer Migrants from the coast of Suffolk. Zool. 1871, p. 2866.
- Note on the Indian Adjutant. Zool. 1871, pp. 2871—2872.
- Three Birds of Prey from the Island of Formosa: *Æsalon lithofalco*, *Scops Japonicus*, *Brachyotus accipitrinus*. 'Ibis,' 1872, pp. 327—330.
- Ornithological occurrences in the neighbourhood of Torquay during the spring of 1872. Zool. 1872, pp. 3134—3136.
- This list, although ending with a note published nearly twenty years ago, will serve to show the character of the observations which Mr. Gurney was in the habit of communicating from time to time to 'The Zoologist,' 'The Ibis,' and the 'Proceedings of the Zoological Society.' Since the last-mentioned date numerous

additions have been made to the List above given, besides the publication of the separate works already noticed. A complete Index to the species mentioned or referred to in Mr. Gurney's writings would be very useful, the names of each species being followed by that of its genus, and the locality where observed or procured. His critical papers in 'The Ibis,' are of great value, and show his intimate acquaintance with the class of birds which formed his peculiar study, and on which his authority is universally respected. As might be expected, Mr. Gurney took great interest in the scheme for converting Norwich Castle into a Museum, and entered thoroughly into the arrangements necessary for the eventual transfer of the collections, although declining, from failing health, to take any part in the building operations, and there can be no doubt that his judgment and experience will be greatly missed by those who have to carry into effect the final arrangements for the reception of the various collections.

Of late years Mr. Gurney led a quiet and almost secluded life in the quaint old family mansion of Northrepps Hall, the natural beauty of the wooded slopes and valleys in which it is situated bearing evidence of the care and taste displayed both by himself and the late Miss Anna Gurney, who preceded him there, and who was as keen a naturalist as he who has so lately passed away. Here, in the midst of his books and extensive collections, Mr. Gurney passed most of his time, closing a chequered life in complete peace and tranquillity.

NESTING OF THE CROSSBILL IN THE CO. WATERFORD.

BY RICHARD J. USSHER.

I HAVE had exceptionally good opportunities this spring of observing the breeding habits of these interesting birds, as four of their nests have been found here, three of them within fifteen hundred yards of my house, and have not been disturbed by me, as I wished to watch the birds, and to let them multiply here. Among them there has been another instance of a male breeding in yellow plumage, similar to that of the bird which I presented last year to the British Museum (Zool. 1889, p. 180). The three other males were red, or red interspersed with brown.

Since my last notice of Crossbills (Zool. 1889, p. 454) they have continued to frequent my plantations uninterruptedly, and have been met with through the winter in flocks, in small parties, and in pairs, usually feeding on the cones of fir and larch trees. I saw a flock on November 8th feeding on the unripe ivy-berries on a low tree by the roadside. They have also been seen feeding on beech-mast on the ground, and in February were noticed picking on the ground beneath a willow covered with catkins. A pair used to resort to a stream below this house, and fly back to the woods above. In February they were frequently met with in pairs.

They have been seen most frequently about a hill on which remain, among younger plantings, portions of the older woods of Scotch fir, and a large grove of larch on which they delight to feed. On the summit of this hill, at a place called the Giant's Rock, is an inhabited house, with a garden near it, among the firs and larch. A young man working in the garden observed, on March 10th, a Crossbill carrying twigs to the top of a Scotch fir, in which he discovered the nest. It can only be seen by looking straight up through the tree-top, in which it is placed, against the sky. This tree, the outer one of the group, is bare of living branches to within a short distance of its top, which consists of a mass of green bending over from the west wind, and in the midst of this mass the nest is built among the thick tufts. It has not been touched. The finder saw the Crossbills visit it frequently with building materials during the mornings and forenoons subsequent to March 10th. On the 13th they carried to it material like moss. I have several times seen the birds fly to and from it, and recognized the male by his redness. He was heard singing on a neighbouring tree. This pair have probably reared their young in safety, for on May 10th a pair of Crossbills were seen feeding their young on larch trees in the vicinity of this nest.

On March 20th I saw another pair fly to a group of trees where I suspected they were building, and in which their nest was discovered on the 24th. It was also in the top of a Scotch fir, among the outer row of the group, on the edge of a field beside a footpath, and about 250 yards from the first nest. It was built in the fork formed by several small lateral branches with the leader, which at that point takes a bend; and the nest,

which is small for so large a bird, might easily be mistaken from the ground for a knot or enlargement of the crooked leader. It was placed in a perfect little cluster or bower of smaller branches. Now that the young have left it, I have it before me. It is composed externally of fine dead twigs of larch and Scotch fir, and, within them, of green moss interwoven with a good deal of sheep's wool, a few horse-hairs, and flakes of finer bark. It was easily reached by climbing.

The birds used not to cease their call-notes while flying to a neighbouring tree, and thence into the nesting-tree,—nay, I have heard the call of the female apparently coming from the nest itself. It is like the syllable "yep, yep" or "yup, yup," while that of the male is much sharper, like "gip, gip." The female sat on the leader of the nesting-tree for a long time, watching men put up a wire-fence close by, without alarm. She is of a brownish grey, smaller than the male, and her beak less evidently crossed. He is golden yellow both above and below, and has no red visible about him. He has all the appearance of a fully matured bird, being, large, active, vigilant, and his mandibles conspicuously crossed. I have had the best opportunities of gazing at both birds when I climbed to the nest, and they, in anxiety for their young, perched—calling excitedly on adjoining tree-tops—within four feet of me. On April 17th these Crossbills were seen to carry bits of something in their mouths to the nest, as if to feed their young.

The nature of the food has not been ascertained, but is suspected to be largely composed of the green opening buds of the larch, on which I have repeatedly seen the male feeding,—e.g., on April 4th.

On April 21st I took Mr. Seeböhm to see this nest. It contained two young in greyish black down, with the olive-coloured feathers beginning to show on the back. On my leaving the tree where the old Crossbills had been watching me at close quarters, they went back at once to the nest.

On April 25th I again ascended the tree, and brought down the one young bird then remaining, for Mr. Seeböhm to see, having first caught it on a branch to which it fluttered from the nest with a remarkable power of grasping with its feet. The points of its mandibles were straight, not crossed, but the edges of the upper one overlapped the lower on both sides. The down

was all gone, and the plumage exhibited dark spots on a lighter ground, both on the upper and under surfaces. I replaced it in the tree, from which it must subsequently have fallen, for a nestling was found in the adjoining field on the 28th, and placed in a cage near the nesting-tree, where the old Crossbills—which had other young ones to feed in the trees there—continued to feed it, often in the presence of observers, until the 11th of May. In the meantime it became accustomed to feed on bruised hemp-seed, and was then removed to my premises. It is almost full-grown, and is tame to stupidity, continuing to feed within an inch of one's face, and when taken in the hand it bites.

The notes of the last pair of Crossbills when excited used often to attract another pair—the male a red one—that frequented the neighbouring trees, and which on such occasions would join their neighbours in the excitement. On April 11th their nest was discovered, by the birds being seen carrying building-materials to it. They picked up bits of hay off the ground, not heeding the observer standing near them. This nest is intermediate in position between the other two, and is but fifteen paces from the out-offices at the Giant's Rock, where a cow, a pony, pigs and fowls are kept. It is over the pathway leading from the house to these premises, and people and dogs are frequently passing beneath it. It is near the end of one of the upper branches of a Scotch fir, and can be easily seen from many points. On April 13th Mr. Barrett Hamilton saw the Crossbills fly to it with building-materials. On April 20th, the female having commenced to hatch, Mr. Seeböhm climbed up to this nest, when both birds perched on this and the next tree, calling excitedly, and he had a good view of them, the "gip, gip" of the male being in this case also shriller than the note of the female. The female soon returned to the nest, on which she could be seen sitting. A hatching Crossbill was seen to raise itself and wriggle frequently (Zool. 1889, p. 180). This was supposed by Mr. Nicond (mis-spelt Ricond, Zool. 1889, p. 71) to have been done to shake off falling snow; but our Crossbills, which I have repeatedly seen do this, bred long after the snow had disappeared.

On April 25th I again visited this nest with Mr. Seeböhm, and found that it contained four eggs, which the female did not leave until I was half-way up the tree, and on my ascending soon crept back to the nest. She was of a brownish grey. I could

see neither yellow nor green about her. Her mate was red. On May 11th I examined this nest again, and found the young birds much grown. Their eyes were open, and their upper mandibles absurdly large. They were not so naked as other young finches, but had a good deal of greyish black down on them,—evidently a provision against the cold of spring in Lapland forests.

Before leaving the Giant's Rock, I may mention that Crossbills have been, for many weeks, seen habitually feeding on the cones of Scotch fir and larch trees close to the house, often within a few yards of it, where one may stand and watch them hang with head downwards, bite off a cone at the end of a swaying spray, fly with it to a steady spot, and, holding it in one foot, open it with their twisted beaks. They neither regard much the talking of people, nor the barking of dogs beneath the trees. On May 18th they had left the nest. It was of similar materials to the others, but was well lined with wool, and a feather or two.

A fourth nest of Crossbills was discovered on March 26th, on the summit of the Black Hill (566 feet), the highest point on my property, exposed to every wind that blows. It was built in the dense top of a thick leader, or upper branch of one of a group of low Scotch firs, about twenty feet from the ground. It was difficult to see from the ground, and was discovered by watching the birds. I ascended to this nest on March 28th, when the female—an olive-coloured bird with a yellow rump—showed the same reluctance to leave, remained watching me from a neighbouring tree, and soon returned. This nest was built of the same materials as that above described, with the addition of some dried grass as lining. It contained four eggs, heavily spotted with rich red-brown, and short and round for the species. They looked clear and fresh. My caretaker had, on March 20th, seen the two Crossbills pick up sheep's wool close to his house, which is not far from the nest. On April 6th he told me that he had frequently seen the male Crossbill, which was red, come and feed the female at the nest. It used to take a circuit round the group of trees, singing on the wing, and then perch on a tree-top continuing its song, or flit through the branches shuffling and flapping his wings with passionate delight.

On April 9th a Magpie was shot on the nesting-tree, and the Crossbills' eggs, which I had abstained from taking for my col-

lection, were gone. The Crossbills have not since been seen about the Black Hill.

In 1888 Mr. W. F. de Vismes Kane, being at Monkstown, Co. Cork, was shown a tree in which Crossbills were said to have nested that season, the first year when they seem to have been commonly seen. Mr. Charles J. Patten, of Bray, informs me that he heard of Crossbills breeding in Co. Wicklow in 1888, and that on July 10th he saw a flock of about twenty-five of them, old and young, in that neighbourhood, while in the following October and November he obtained Crossbills from the Co. Westmeath.

Mr. Kane heard also that a pair of Crossbills had frequented a demesne in Westmeath during the summer of 1888; but his informant, a steward, said that they had haunted the place for four years.

It was on November 13th, 1888, that I first saw Crossbills at Cappagh; but my men, who have since so ably aided my observations, saw Crossbills here on December 26th, 1887; and during January, February, and April, 1888, several of these birds were shot at different places in the Blackwater Valley (Cork and Waterford).

It seems evident that this species is on the increase in Ireland at present. Other young broods in parts of my ground, besides those I have mentioned, are now to be seen among the trees being fed by their parents.

THE RUFF AND REEVE IN LINCOLNSHIRE.

BY JOHN CORDEAUX.*

THE writings of Colonel Montagu and the Rev. Richard Lubbock have made ornithologists familiar with the habits of the Ruff and Reeve in the fens of Lincolnshire and Norfolk at the commencement of the present century. Comparatively abundant as was this singular species in those days in the low-lying districts before drainage and complete cultivation had quite broken up their haunts, they still bore a very small proportion to the immense numbers which at one time visited

* From 'The Field.' Communicated by the author.

these districts within the memory of old fenmen living. This would be from the middle to the end of the 18th century, when the conditions of existence were undoubtedly more favourable to their preservation and regular breeding.

From our somewhat restricted knowledge of those earlier times, we are perhaps apt to connect the former summer haunts of Ruff and Reeve entirely with the unreclaimed fens and marshes of Lincolnshire and Norfolk; yet there is sufficient data to show how abundant at one time was this species over the whole of the low-lying lands of Lincolnshire north of the true fen; in the Humber marshes to the junction of that river with the Trent; the wastes of Axholme, and all the wild heath-clad commons, some thousands of acres, which extended almost unbroken from Mid-Lincolnshire to the extreme north-western boundary of the county.

In later years the spring haunt *par excellence* of the Ruff and Reeve has been that broad belt of grass-lands, better known as the marshes, the great maritime plain of Lincolnshire, between Gibraltar Point and the mouth of the Trent—a lonely district, little disturbed except by the shepherd and his dogs, and the chance visits of some grazier to inspect his flocks and herds in their summer pasture. Here in late spring-time the lush-green pastures, dark under the keen east winds, spread like an ocean, league on league, to a sky horizon, or finally merge into that long irregular line of sand-dunes which fringe the desolate coast.

The Rev. W. B. Stonehouse, in the 'History and Topography of the Isle of Axholme,' published in 1839, speaking of the Ruff, says, "Soon after their arrival in the spring, they take up their abode in such marshy and fenny places as formerly abounded in the commons of the Isle of Axholme; and each of the males, of which there appears to be a greater number than the females, immediately fixes upon a particular dry and grassy spot in the marsh, about which he runs round and round until it is trodden bare. As soon as a single female arrives, her feeble cry rouses all the males to war, for they instantly begin to fight, and she becomes the prize of the victor. An old fowler told me that these birds form themselves into a circle, while two of them fight a pitched battle in the centre. During the engagement the rest keep running round. I went with him in the year 1819 on Burringham Moors to ascertain the fact, but was not able to

approach sufficiently near to them; the birds being alarmed, seemed to rise from a cluster and took wing. I afterwards saw a dozen which the same person had taken in his snares or nets."

Should any of my readers wish to ascertain what a *hill* of Ruffs is like, they should inspect the beautiful case of these birds placed in the Central Hall of the Natural History Museum at South Kensington. The late Capt. Healey, who at one time owned the Ashby decoy, had a case of full-plumaged Ruffs, obtained in the Trent district. There are also examples in the Gainsborough Museum, obtained in that neighbourhood; also in private collections in the county. When I first came to Great Cotes, thirty-eight years ago, I knew an old sportsman who, when a young man, went regularly into the Stallinborough and Immingham Marshes in May to shoot Ruffs and Reeves, and Dotterel. His gun was a long-barrelled flint and steel, and great execution he did at times with it.

The late Mr. Thomas Hopkins, of Limber Grange, told me that he had heard his grandfather, who was a great shooter, talk of seeing the bank between Clee and Tetney Haven, in the spring, covered with Ruffs and Reeves, and so tired with their long flight, that you might almost knock them down with a stick, and that he could soon shoot as many as he could carry.

The Rev. Edward Elmhirst informed me (*in litt.* 1886) that he quite well recollects his father shooting Bustards and Ruffs and Reeves on Thoresby Common, and his sending a Bustard to Sir Joseph Banks (then living) about sixty-eight years ago. The author of '*Notitiae Ludæ*', published in 1834, mentions the Ruff and Reeve in his very imperfect list of birds found in the neighbourhood of Louth. In the early part of this century the Ruff and Reeve used to arrive regularly in the spring in the Humber district. I was familiar with an old fowler, long since departed, who gave me much interesting information in connection with the former abundance of these and other birds within his own recollection. Ruffs and Reeves came in flocks in May, at the same time as the Dotterel, and frequented the grass marshes near the Humber, being partial to those fields which were rough and uneven with hassocks; he had never known any instance of their remaining to nest, and they left again about the end of the same month. What a crowd of pleasant memories rush in as I write these lines about my old

comrade in many a shooting adventure. He was the type of a class, common enough at the commencement of the century, but now, like the birds they followed, fast disappearing from amongst us. He made bricks in summer, and in winter earned a decent competence by coast shooting. Often when waiting to "stand flight" have I passed an hour in his cottage close to the coast, listening to

"Such tales as old men tell,
When age has frosted, and when toil has numbed them."

Making every allowance for the lapse of time and an old man's memory, those must have been glorious days for the coast shooter; black masses of duck—Mallard, Wigeon, and Pochard—acres in extent on the river; on the muds, Knot, Grey Plover, Redshank, and Godwit innumerable, so that he could go down in the early dawn to low-water mark, and in a few hours shoot sufficient "almost to load a donkey." Then in the latter spring came Dotterel, "Roughs and Rees," Whimbrel, and late Golden Plover with black breasts, into the grass-marshes and coast "fitties," in numbers which to us in these days appear almost incredible. By long habit in trying to circumvent shy creatures, he had contracted always a stooping gait, with his head thrust forward, his keen grey eyes ever ready to take in the smallest sign of bird-life, and he invariably carried his right hand partly closed, as if grasping his favourite fowling-piece. In later years his heavy duck-guns got too much for him; but he carried a handy, far-reaching double, with "Stubbs-twist" barrels to the last. For so it came about one winter night, after a day on the coast, reclining by his own fireside, within hearing of the calls of the shore-birds, when outside the chill air was filled with soft, silent, slow-descending snowflakes—

"Death, like a friend's voice from a distant field
Approaching thro' the darkness, call'd,"

and all that was best in the time-worn frame went out alone into the night.

Messrs. Clarke and Roebuck, in their excellent 'Handbook of Yorkshire Vertebrata,' remark:—"Until about the commencement of the present century this species was abundant, and bred in the carrs of East Yorkshire, on Skipwith Common, near Selby, and also on Hatfield Chase, and the carrs about Doncaster,

where Mr. Hugh Reid—as he informed Mr. More—remembered them breeding quite plentifully. Mr. Arthur Strickland informed Mr. Allis, in 1844, that before the drainage of the carrs they used to be taken in considerable numbers in the breeding season, but that he should doubt if any had bred in the county within the half-century." In 'The Zoologist' for 1864 (p. 9362), Mr. W. W. Boulton mentions facts which are suggestive of their having nested near Beverley during the summer of that year.

There is quite sufficient evidence, however, of their nesting in Lincolnshire long into this century. Between forty and fifty years ago they bred regularly on — — — in company with hundreds of Redshank and Snipe. My correspondent, who lives in the neighbourhood, took a nest there in 1873. He also took a nest of the Wood Sandpiper in 1871 with four eggs. A nest also of the Reeve with two eggs was taken in the same locality in 1882, and the female shot. This last probably marks the extinction of the species as a breeder in this county. I have seen eggs which were taken in North Lincolnshire in 1866.

The species occur with tolerable regularity in the coast districts in the autumn, in August and September; perhaps the largest number I have seen together at this season was in 1884—twenty or more in one flock. Considerable numbers were reported during the same autumn.

In 1870, on June 10th, I saw seven Reeves with a Ruff in a large pasture near the Humber, and had the pleasure of examining them through a glass, and was then able to take the following notes of their actions:—Compared with either Golden Plover or Dotterel, they are restless, unquiet feeders, and are frequently shifting their ground, taking little flights of twenty or thirty yards. Considering the length of the tarsi, they are by no means high standing, looking less elevated than the Golden Plover. The body is carried horizontally, the tibiotarsal joints being much bent, the head, if anything, inclined downwards; they run rapidly, now and then stooping to pick up some small substance, probably an insect, from the grass, and often crossing and re-crossing each other's tracks, not feeding like the Knot, all in the same direction. The Ruff appears both proud and jealous of his several wives, following them up closely, and occasionally, when he thinks they are getting too far away, takes a short flight towards them. He is most watchful, and

ever on the alert, on the slightest appearance of danger invariably taking the initiative, stretching himself to his full extent, and is then a conspicuous and beautiful object, looking nearly twice his natural size. If the alarm is well grounded, he at once rises, his Reeves rising at the same time, and they go off together at a great pace, silently and in close order, skimming the ground, and sometimes will shoot simultaneously upwards to a considerable height, and as rapidly descend. This Ruff was a dark-plumaged variety, showing a considerable amount of deep chestnut and purple. [Zool. 1870, p. 2286.] I again saw a Ruff, then in plain plumage, with seven Reeves, in this pasture on August 29th of the same year.

They seem at all times very silent birds, and I cannot recall at any time, either in the spring or autumn, having heard any resemblance to a cry or note. Mr. Howard Saunders ('Manual of British Birds,' p. 586) describes the note as a low "kack, kick, kack." With us they are far less frequently met with in the spring than in the autumn, and the females appear considerably to exceed the males in number. I have found the stomachs crammed with the remains of small coleopterous insects. On four occasions in recent years the Ruff has been obtained in this district in mid-winter—December and January—and three were also taken in flight-nets on the coast, in October, 1889. I have, however, never seen an example of the Reeve killed in the winter months.

The occasional appearance of Ruffs and Reeves in the future in our coast districts, during the periods of their double passage, may reasonably be expected, but, unless England becomes dispeopled and uncultivated, nothing can ever bring back in numbers or variety the wealth of the ancient avifauna. No Act of Parliament, however stringently framed, would be sufficient in itself to bring about the return and nesting of locally extinct species in the dried-up marshes and fens. It seems, therefore, all the more incumbent on us carefully to preserve each fragment of tradition in connection with past days, not only for our own benefit and instruction, but also for the sake of those who come after us.

ON THE OCCASIONAL APPEARANCE IN ENGLAND OF
THE CRESTED TIT.

By J. H. GURNEY, F.Z.S.

THE Crested Tit, *Parus cristatus*, Linn., being exclusively a Scotch bird, so far as our isles are concerned, and even there considered very rare or at least extremely local, doubt has been continually thrown, but with some injustice, on the records of its appearance in England.

As it is migratory, there is nothing remarkable in its being found in England or Ireland, and it is not clear why there should still be this doubt about it; but perhaps we have all taken our cue from the late Mr. Gould, who in his 'Birds of Great Britain,' says of this species, that "in England it is never seen." It may be that this dictum, coming from so high an authority, has been accepted without very much enquiry. Another reason is that few are aware, probably, until they read the annexed list, how many times it has occurred in England, or rather is said to have occurred, on what seems respectable authority; and very likely the list does not include every instance of its occurrence, though reference has been made to almost every printed local avifauna.

We have comparatively ancient authority for its being an English bird, for so far back as 1797 that old writer, W. Lewin, remarked that it had been "killed in Scotland, and also in Yorkshire" ('British Birds,' iv. p. 46).

Yorkshire has been especially favoured by its visits, for no less than five are quoted in Messrs. Clarke and Roebuck's 'Yorkshire Vertebrata,' to which a sixth, shot at Keighley in August, 1887, has to be added ('Naturalist,' 1888, p. 15), and a seventh seen at Meersbrook, of which mention will be made further on.

In the county of Durham it has been shot once, on Sunderland Moor, in January, 1850, and the specimen is said (Zool. p. 2766) to be in the possession of a Mr. Calvert, whom I have tried to trace, but in vain. It is also mentioned in the list of birds contributed by William Proctor to the Rev. G. Ornsby's 'Sketches of Durham,' p. 197, as "very rare," the authority being, as appears from Hancock's 'Birds of Northumberland and Durham' (p. 76, note), a Mr. P. Farrow, who saw three or four near Witton Gilbert.

The late Mr. Robson included the Crested Tit in the list of Cumberland birds (Zool. 1854, p. 4167), as having occurred at Gosforth; the statement was challenged at the time (p. 4366), and as Messrs. Macpherson and Duckworth pass it over in their 'Birds of Cumberland,' we may perhaps dismiss it as insufficiently authenticated.

There is no evidence that it has been taken in any other northern county until we come to Derbyshire, where one was seen by Mr. C. Dixon, as stated in 'Our Rarer Birds' (p. 71), in a plantation at Meersbrook, as he informs me, near to Sheffield, and in fact on the Yorkshire side of the boundary.

In 'The Zoologist' for 1887 (p. 250) it is stated that a Crested Tit, or Tits,—for the writer puts it in the plural,—was seen by the late Dr. Leith Adams, at Biddlesden, in Buckinghamshire, and another by Mr. Morgan at the same place in November, 1886. The latter observer may have been in error, but Dr. Leith Adams was a good naturalist, and not very likely to be mistaken, and the communication comes through the hands of Lord Lilford.

Mr. Harting makes out a good case for Middlesex ('Birds of Middlesex,' p. 56), and further adds that one was shot by Mr. Engleheart at Blackheath, in Kent (*l. c.*). Dismissing Norfolk, where one is supposed to have been seen (Trans. Norwich Nat. iv. p. 274), and, turning to Suffolk, we find one seen at close quarters by Dr. N. F. Hele, about which he tells us "there could not possibly have been any mistake" ('Notes about Aldeburgh,' p. 82); another shot at Melton about 1873, afterwards examined by the Rev. Dr. Babington ('Birds of Suffolk,' p. 63), and another about 1840, near Bury (*l. c.*, p. 251), taken by Mr. Camoridge, preserved by Mr. Bilson. I am not satisfied about this last, but consider the occurrence of the other two established.

Mr. H. L. Meyer, in his 'British Birds' (vol. ii. p. 180), states that, in the autumn of 1839, he thought he saw a Crested Tit at Claremont, in Surrey, but expresses some doubt, not being aware that it had been ever met with in England at that time.

In March, 1874, one allowed Baron Hügel to approach it so closely in a Devonshire lane, that he nearly touched it with his walking-stick (Zool. 1874, p. 4065).

Mr. R. Laishley, in his 'British Birds' Eggs,' says (p. 68) he was shown a Crested Tit which was killed at Yarmouth in the Isle of Wight, perhaps the bird alluded to by the Rev. C. A. Bury

in 'The Zoologist' for 1844 (p. 639), and subsequently in Wise's 'New Forest,' and in the Rev. E. Venables' 'Guide to the Isle of Wight,' as obtained by a Mr. Butler. There is no reason to doubt his veracity, and, if it is not the bird alluded to by Laishley, then two have been shot in the Isle of Wight, where they may have come from France; I have seen one which was shot near Boulogne.

Mr. Edward Hart, the possessor of one of the best collections of British birds, has a Crested Tit which was shot in 1846 at Stanpit, near Christchurch, in a belt of fir-trees at the edge of a marsh by a man named Footner: this is the bird mentioned in Wise's 'New Forest,' App. III. Mr. Hart also tells me that the Rev. Mr. Pearce had one shot at or near Morden, in Dorsetshire, and which has not been recorded. There is not the slightest reason to doubt Footner's word; he showed Mr. Hart the place where he shot the bird, and if that is genuine Mr. Pearce's may well be so too.

In Ireland, Mr. Blake-Knox informed Mr. Dresser that he had one, killed in Wicklow in 1869 ('Birds of Europe,' iii. p. 152), and it is not easy to see why any doubt should be cast on so positive a statement, corroborated as it is by so many occurrences of Crested Tits in England.

It will be seen that we have here a list of about twenty-two Crested Tits, seen or killed, of which three rest on birdstuffers' authority, and fifteen on the authority of amateurs. Twelve of these were on the east coast, the county of Yorkshire being especially favoured with no less than seven. These may most likely have been of Norwegian origin: it is fair to assume this, and that they had crossed the sea with some of the great bands of Goldcrests, or, more likely, with smaller parties of the Great Tit, which, as is well known, visit England in that way. Mr. R. Collett has especially remarked on their consorting with other small birds during migration (*c.f.* 'Birds of Europe,' iii. p. 153). Or they may have come from Holland, for Mr. Seeböhm tells us, in his 'British Birds,' that the Crested Tit is very abundant at Valkenswaard, which is not two hundred miles from Suffolk. Autumn migration in Suffolk and Norfolk is generally from east to west. It must be admitted that it is a curious fact that in fifty-three years Herr Gätke has only known one to be captured in Heligoland; but then Heligoland is an anomalous little island, and it

has been shown in the Norwich Naturalists' Society's 'Transactions' (vol. iv. p. 60), that in respect of its avian migrations it is totally different from our coast of England.

Mr. Gray thinks the Scotch colony is reinforced from abroad ('Birds of Scotland,' p. 104), for he says the species is much more abundant there in some years than in others.

NOTES AND QUERIES.

The late Mr. Booth's Collection of Birds.—In your memoir of the late Mr. E. T. Booth," which appeared in the March number of 'The Zoologist,' you say, on p. 96, that the groups of British birds in the British Museum "are being mounted in imitation of Mr. Booth's cases." This statement is incorrect; and as I should not like to see it remain uncontradicted in the pages of 'The Zoologist,' I beg to make the following remarks:—The plan of forming an exhibition in the Museum, illustrating the nesting habits of British birds, was entirely, and in its characteristic details, my own idea, and part of a much wider scheme. It was commenced in 1876, long before I knew of the existence of the Dyke Road Museum, or of Mr. Booth himself. When I became acquainted with him, in 1883, our collections bore already a very different character, so that we more than once discussed the merits of our different methods; he selecting the finest and most perfect specimens obtainable, frequently changing them for better ones; I insisting upon obtaining the pair of individual birds which built the nest and were the parents of the young; he maintaining that it was necessary for the conservation of the groups to make the surroundings entirely of artificial materials; I preserving the whole of the natural surroundings, and replacing only the perishable parts of plants by artificial facsimiles. Besides, the Booth Museum is a general collection of all the birds resident in, or visitors to, the British Islands; the series in the British Museum is limited to the species breeding in this country. I must therefore decline to be represented as the imitator of Mr. Booth, although I yield to no one in admiration of his work at the Dyke Road Museum, and only wish I possessed a fraction of his unrivalled experience in British Ornithology. If anything has helped me in conceiving the idea of mounting animals in groups,—and thus forming an exhibition attractive, and at the same time instructive, to the public,—it is a collection of the animals of Würtemberg that was formed under my own eyes by the then best German taxidermist, the late Hr. Plouquet, of Stuttgart. His famous collection may still be remembered by some of your readers, as it was brought to the International Exhibition in London in 1851, and afterwards sold to the Crystal Palace

Company. His method approached more nearly that of Mr. Booth, and specimens of his skill, though much deteriorated by time, are still to be seen in the Museum at Stuttgart.—A. GÜNTHER (British Museum, Natural History).

MAMMALIA.

The Wild Cat in Inverness-shire.—In 'The Zoologist' for April and May are some interesting notes on the Wild Cat in Austria, and its extinction in Yorkshire in 1840. It may be of interest to some of your readers to know that this animal, although now very rare in the Northern Highlands of Scotland, is still met with in some of the forests. On the 28th November, 1889, I received, in the flesh, a magnificent male, which had been caught two days previously in the deer-forest of Invermoriston, in Inverness-shire. This animal, which was in its thick winter coat, measured 3 ft. 4 in. from nose to extremity of tail; 1 ft. 2 in. high at the shoulders; and weighed over 12 lbs. The head was broad and rounded, and the ears set wide apart. The canine teeth were fully half-an-inch in length. The bright greenish-yellow eyes, when I first received it, gave a very fierce expression. The ground-colour of the fur on the body, flanks, and sides is a rich tawny-grey, marked with dark brownish transverse stripes. The face, ears, and feet are tawny-yellow; two dark streaks run from the corners of the eyes on to the cheeks, and five or six dark lines commencing above the eyes are continued to the shoulders, forming a chain of broken streaks to the tail. The legs down to the knees are banded with four dark rings, and the heels of the hind feet are black. Its tawny-grey chest is crossed with two obscure transverse bands, and its chin yellowish-white. The tail, which was comparatively short, was full and annulated with three black rings, and two or three inches of the tip is black. On December 5th, also in 1889, a female Wild Cat was sent me from the same deer-forest. On dissecting these two specimens, I found they had only eighteen caudal vertebræ, while I believe there are about twenty-four in *Felis domestica* and its supposed ancestor, *Felis maniculata*. On the 11th of March of the present year I received yet another male example of this species, taken in Glen Moriston. This fine old tom measured 3 ft. 3 in. in length, and was very stoutly built. The ground-colour of this animal's fur was a much deeper tawny than the fur of the other two specimens, whilst the thick tigrine-like tufts of air on the cheeks formed a slight mane, such as is sometimes seen on the cheeks of an old male Tiger. On April 4th another specimen, a female, arrived from the same forest. Doubtless these four examples belonged to one family. The two females, like other members of the *Felidæ*, are less than the males, although both are large and powerful animals, being slightly over 3 ft. in extreme length. A friend in Sutherland, who is well conversant with the *feræ naturæ* of the Highlands, writes me he believes the Wild Cat is now nearly, if not

already, extinct in the deer-forests of that county, no trace of one having been seen for some years, although twelve or fifteen years ago a season seldom passed without some of these animals being trapped or otherwise captured. It is a melancholy reflection that in a very few years the Wild Cat, like the Wolf and the Wild Boar, will have entirely disappeared from our islands.—WILLIAM YELLOWLY (South Shields).

Wild Cat in Yorkshire.—In Murray's 'Handbook for Yorkshire' (1882, p. 478), there is an account of the Wild Cat legend already referred to (p. 176-7), and a description of Barnborough Church. No mention, however, is made of any picture in the church commemorating the event. The guide-book says:—"The church itself contains the curious monuments of Percival Cresacre (living in 1455) and of his wife Alicia, died 1450. On her gravestone nine strings of beads are so arranged as to form a cross. The tomb of Percival Cresacre is between the chancel and the north chapel. His effigy in oak lies on it; and the front and sides are covered with the rosary, the favourite device of the Cresacres, and with short inscriptions. This is the Cresacre said to have been killed by the Wild Cat, and the lion at the feet of the effigy passes, in local opinion, for that animal. A wild cat was the crest of the Cresacres, whose interest in Barnborough passed by marriage to the family of the great Sir Thomas More."—JOHN CORDEAUX (Great Cotes, Ulceby).

The Polecat in Sutherlandshire.—On the 22nd December, 1889, I received a fresh-killed female Polecat or "Foumart," its fur being in beautiful condition. It was caught in Strathnaver, in the north of Sutherland. The Polecat is now extremely rare in the north of Scotland, especially in Sutherlandshire.—WM. YELLOWLY (South Shields).

Water Shrews in North Ayrshire.—In August, 1885, when botanising on the Glen Burn, between West Kilbride and Fairlie, I had an opportunity of observing, under very favourable circumstances, an apparently full-grown example of this fine species. Nearly a mile above its entrance to the sea, the stream flows over a ledge of sandstone rock, and makes a considerable fall into a deep gorge, the sides of which are picturesquely wooded. Having descended into the bed of the stream immediately below the fall, I was engaged in examining some large moss-grown stones, when I observed the Shrew in the act of emerging from a hole beneath one of the largest. It raised its head, and stood for a few moments sniffing the air and looking towards me, apparently uncertain whether to advance or retire. It then retreated into the hole, and did not again make its appearance. My close proximity, as well as the position assumed by the animal, afforded me a satisfactory opportunity of observing the elongated muzzle so characteristic of the genus, and the conspicuous

white breast, which contrasts very strikingly with the brown fur of the sides and back.—D. A. BOYD (Proc. N. H. Soc. Glasgow, 1890, p. 293).

Varieties of Arvicola amphibia.—As Mr. Aplin asks for information with regard to the distribution of the black variety of the Water Vole, he may be interested to know that it is by no means infrequent in Norfolk. I have seen many entirely black specimens, but never remember to have met with any individuals intermediate between this and the normal colours. The late Mr. Lubbock was quite of opinion that this variety, as I believe it is rightly regarded, was entitled to specific distinction. He says, in an unpublished note, which I have quoted in the second edition of his 'Fauna of Norfolk' (p. 10, note):—"I have examined many of these animals when dead, and have watched their habits when alive, and I must believe that the difference of colour in this case arises from diversity of species. The brown are *considerably* the largest; and in the spring, when they may be seen often in pairs, I have never observed a brown and black one together, but the colours always correspondent. At that season they may frequently be seen feeding close together at the entrance of their hole, and examined at the distance of a few yards." Professor Newton told me that the black-furred was the only form of this animal which he used to meet with at Elvedon, near Thetford. I have seen several white varieties of this animal. In September, 1872, Mr. R. B. Leeds shot a pure white Water Rat with pink eyes at Castle Acre, near Swaffham. Mr. Gunn records the occurrence of another in 'The Zoolologist' for 1866 (p. 152), also an example killed at Cossey, near Norwich, on July 16th, 1880, in 'Land and Water' for Nov. 13th of that year; and I saw a pure white Water Rat at Mr. Roberts' of Norwich, killed near this city, in October, 1880. The black variety of *A. agrestis*, referred to by Mr. Aplin, was sent to be preserved by Mr. Gunn, at whose shop I saw it, and it was a beautiful little animal, pure black.—THOMAS SOUTHWELL (Norwich).

Lepus variabilis in North Wales.—On April 6th last I was surprised at seeing two Mountain Hares on the top of a hill near Snowdon, at a height of somewhere about 2500 feet. Both were apparently quite white, although the winter in that district had been unusually mild. Messrs. Harvie-Brown and Buckley, however, say that some they saw in Harris were "as pure white as they well could be at the end of April" ('Fauna Outer Hebrides,' p. 39). There were probably a good many more than the couple I saw, for some gentlemen who climbed the mountain on the same day stated that on the summit they had seen "some white things running about;" but I did not observe them on any of the neighbouring hills, and was unable to get any further information regarding them. Is it known whether the species has been introduced into this district? And if so,

when, and by whom?—ARTHUR H. MACPHERSON (51, Gloucester Place, Hyde Park).

[The white Hares seen on Snowdon are no doubt descendants of those turned out some years ago by Mr. Assheton Smith, of Vaynol Park, near Bangor, from whose windows the snow-capped Snowdon may be seen. Our note-book reminds us that, in the course of a week's shooting which we enjoyed on this estate in January, 1888, the number of Hares bagged from day to day, in addition to a variety of other game and wildfowl, was 62, 81, 78, 48, and 45, or a total of 314. Of these fully two-thirds were *Lepus variabilis*.—Ed.]

Habits of the Great Noctule Bat.—Last year (Zool. 1889, p. 258), I sent you an account of the first flight of the Noctule Bats after their winter hibernation, or at least the first evening when they were observed to issue from the top gable of my house, when I counted fifty-seven of them: this happened on May 17th, 1889, at 8 p.m. On the 21st of this present month of May I again counted seventy-eight of them emerge from the same spot at 8 p.m. exactly, though I was informed they had appeared a few days previously. It is curious that they should observe such regular seasons and hours. When they come out they fly away immediately at a great height and to a considerable distance into the marshes, so that they all disappear in a very few minutes. After a flight of an hour or two they return to the house, but after some weeks they entirely disappear. I presume they take shelter in lofty trees elsewhere, and it is not till about the following September that they return to the houses. In April, 1884, I took some hibernating from a large willow tree; and with the exception of the months of May and June, I have not noticed them till Sept. 3rd (1882), Sept. 5th (1886), and Sept. 15th (1887). On these occasions specimens were shot and identified. We have several other bats in this neighbourhood that observe different seasons, and perhaps later on I may be able to send you further particulars of them, but I thought you might like to record these notes now.—GEORGE DOWKER (Stourmouth House, Wingham, Kent).

CETACEA.

White-beaked Dolphin on the Norfolk Coast.—On the 16th of April I saw at Yarmouth a very handsome specimen of this Dolphin, which had been stranded alive the previous evening on the beach, at the entrance to the river Yare at Gorleston. It was an adult female, 6 ft. 3½ in. in a straight line from the tip of the beak to the medial notch of the caudal fin. I believe it was sent for exhibition somewhere in the Midland Counties.—T. SOUTHWELL (Norwich).

BIRDS.

Small Birds and the Fruit Crops.—The following letters, addressed to the Editor of 'The Standard,' appeared in that journal on April 14th:—

"Allow me to give a head gardener's experience of small birds in fruit gardens. Taking charge here twelve years ago, orders were given that no birds' nests were to be taken, nor the eggs destroyed, and no birds to be killed except the Bullfinch. Consequently I began to provide protecting materials, such as wire pea-guards, and fish-netting. The pea-guards, purchased twelve years ago, are as sound now as when bought, and likely to wear a lifetime. The first cost seems rather a drawback; but they are essential to the kitchen-garden crops, to protect the peas, and also the cabbage-lettuce, radishes, and a host of small seeds. These wire-guards are constantly in use during the spring and summer months for the protection of all seeds against the small birds, and I am happy to say they answer the purpose well. Garden-netting is used for strawberries and currants (red and white), also for ripe gooseberries. The buds of these small fruits are protected by dusting the small or large bushes with lime and soot, when the trees are damp enough to allow it to stick to the branches, just before or after Christmas, or during the month of January. Large standard plum trees should have powdered lime thrown over the heads on a foggy morning every year, either in December or January. It is a mistake to think the first rain will wash the lime off the trees. I do not observe any increase of our feathered songsters here with all our protection. Nature seems to provide her own way of limiting the numbers of small birds. I may say we have a man on Sunday duty. During the nesting season we take the precaution not to have the birds' nests interfered with, if possible. We are surrounded by large forest trees, and also woods here and there round the park, and have many small birds' nests in the fruit trees in the kitchen garden. Yet we have had an abundance of hardy fruit every year, and have escaped, or nearly so, from the attacks of caterpillars, and also the maggots in the apple trees, these last few years—scourges which have been so prevalent all over the country. I attribute this to keeping the orchard apple trees clean by liming,—both old and young are kept clean,—and we must not forget the help we receive from the small birds. We have a great wealth of blossom at the present time on the wall trees, and a great promise of apple and cherry to come in the orchard.—ROBERT SMITH, one of the Committee of the British Fruit Growers' Association (Yalding, Kent)."

"I have read with much interest the very conflicting opinions of your correspondents on the subject of the destructiveness of small birds. My father, the late Mr. Alfred Ellis, was a friend and contemporary of the late Charles Waterton, and, like that eminent naturalist, he was a great protector and observer of all our British birds, and yet his gardens, both

flower and vegetable, were very much above the average both in beauty and productiveness, though the surrounding district was swarming with all descriptions of birds. The Kestrel and White or Barn Owl were specially encouraged to breed in the vicinity, and it was to their relentless pursuit of the mouse tribe by day and night that his garden escaped the depredations of these unnoticed pests. The ordinary keeper always shoots these interesting creatures, though they seldom or never touch young birds, and invariably prefer mice and beetles to any other diet. I do not believe any wild bird destroys buds, or anything else, for the mere love of destruction, as some of your correspondents seem to imply, and if they now and then nip off a bud for the sake of an insect that would not perhaps injure the fruit, this is more than counterbalanced by the numbers of destructive insects they consume. A good many of our small birds will eat ripe fruit when they get the chance, but a little protection will prevent this, and, after all, they have a right to a little, as by their consumption of millions of grubs they have helped to produce the crop.—GEOFFREY ELLIS (Leicester)."

[Mr. Ellis is not quite correct in stating that the Kestrel and Barn Owl seldom or never touch young birds. On examining the pellets cast up by them, which furnish the best evidence in regard to the nature of their food, we have repeatedly found the skulls and other bones of Sparrows and Greenfinches, in addition to the remains of mice, voles, and shrews.—ED.]

Former Occurrence of the Collared Pratincole in Essex.—I have just investigated the history of an Essex specimen of this rare bird, which seems to have been completely overlooked by ornithologists, though it was briefly recorded at the time of its occurrence in 'The Field' (August 31st, 1861), by Mr. Henry Shaw, taxidermist, of High Street, Shrewsbury, who states that it "was shot by Capt. the Hon. G. R. C. Hill, about a fortnight back, in Essex, whilst out duck-shooting; it is a fine bird, and had much the appearance of having recently sat upon eggs. The stomach was full of small beetles. Its appearance on the wing was much like that of the genus *Hirundo*. It is now with me for preservation, and will in due course be placed in the collection of the Viscount Hill at Hawkstone." Lord Hill has been good enough to inform me that the specimen, an adult female, is still in his possession, while his brother, the Hon. Geoffrey R. C. Hill, writes me that he cannot now remember the name of the parish wherein he shot the bird, but that at the time he "was shooting 'flappers' on the Kelvedon Marshes with Mr. Philip Bennett (who was in the Blues with me at that time), and I rather fancy the marshes belonged to, or were leased by, his father, of Rougham Hall, Bury St. Edmunds. There was a decoy there in those days, and very close to that, as we were walking up the side of the ditches after ducks, I saw a single bird coming over my head. Not knowing what it was, I shot at it, and not being any the wiser after I had

got it in my hand, I asked leave to send it to Mr. H. Shaw, of 45, High Street, Shrewsbury, for preservation for my brother's museum. I may have stated to him at that time more particulars than I am now able to give you." From the above it seems probable that the bird was shot close to the decoy on the Old Hall Marshes, Tollesbury.—MILLER CHRISTY (Chignal St. James, Chelmsford).

Reported Nesting of the Black Redstart in Dumfriesshire.—I believe that no well authenticated instance of the breeding of the Black Redstart in Great Britain has hitherto been recorded. A lady, a near neighbour of mine, who is fond of observing birds, tells me that about the 12th of June, last year, she found a nest of the Black Redstart about half a mile from Maxwelton, in Dumfriesshire. The nest was in a stone "dyke" (wall), by the side of a road on a high hill, called "Crossford." The young were hatched. She tells me that she often went to watch the birds, both with a field-glass and without one; that they let her get very near, that she is certain of their identity, and that they were Black, and not Common, Redstarts. I think that this may be accepted as an undoubted instance of the breeding of this species in this country.—W. OXENDEN HAMMOND.

Have we two sorts of Woodcock?—Mr. Grant's paper, "Notes on Woodcock and Snipe," in the last issue of 'The Zoologist,' raises a question of considerable interest to naturalists and sportsmen, whether we have two sorts of Woodcock visiting this country,—a large light coloured bird, and a smaller dark one? The result arrived at by Mr. Grant, after an examination of a large series of specimens from various countries, is that the so-called small rufous race represent the young of the year, and the larger and greyer birds are adults. Without wishing to give any decided opinion, which might imply an absolute subspecific difference between the two, I think there are some facts in connection with local evidence which appear to stand opposed to Mr. Grant's theory. That there are, apparently, two sorts or races of Woodcock, recognised as such by sportsmen, past and present, which arrive periodically in the autumn in flights on the sea-coast, is a fact which cannot be disputed; also, that they are distinguishable, as stated above, by their size and colour. The records of the migrations of Woodcocks in connection with the east coast, which I have kept since 1866, indicate that, as a rule, the bulk of immigrant cocks coming to us in October and November, are recognised as belonging to the so-called small dark, and presumably Scandinavian, race, and that they arrive with N. and N.E. winds. Old east-coast sportsmen, who are, perhaps, best qualified to give an opinion, say that the large grey birds may only be expected with winds from points south of east, and that they do not arrive in flights, except under these conditions. I quite agree with Mr. Grant, "that the triangular marks on the outer web of the first quill-feather are certainly

indications of youth, and not of sex." On the presumption, then, that the dark birds, which comprise our ordinary autumn flights, are all birds of the year, these markings should be very distinct and uniform. I have not found this to be the case. In some, the quill-markings are clear and perfect enough, but they appear to run through various stages to complete obliteration, the outer web of the feather becoming at last light coloured and uniform in old birds. At what period the final stage is reached, nobody can say. It is sufficient for our purpose to know that, tested by the notch-markings on the first primary, the birds shot from our big autumn flights, with the same character of plumage, are certainly not all of the same age. Another fact, which militates against Mr. Grant's theory, is that during their stay with us they do not appear to lose racial distinction: rufous they come, and rufous they depart, and are readily distinguishable as such. Only on March 26th last I flushed a little red cock from under a laurel in the garden, evidently a pilgrim on his return journey. There is certainly no reason why examples of both races, supposing such exist, should not be obtained in widely separate countries. It is not improbable that their nesting-quarters may considerably overlap; both certainly are notoriously birds of passage, and might turn up anywhere.—JOHN CORDEAUX (Great Cotes, Ulceby).

Attacks by Owls.—A few days ago I had a novel and somewhat unpleasant experience of the way in which the Tawny Owl resents an approach to its nest. About three weeks ago I found in an old dead elm a nest containing three young and two eggs, which we much hoped would not be disturbed, as till last year this bird was not known to breed here. One bright moonlight night I was standing close to the trunk of the tree, watching for the return of the birds with food for the young. Presently one of the parents perched on a tree a few yards away, uttering a peculiar whining cry, and in a minute or two dashed straight at my head. The blow inflicted was very like that of a moderately hard snowball, and putting up my hand I found my forehead bleeding freely from several places, while my cap (a soft grey woollen one) was carried off as a trophy, and found the next morning under a tree about seventy or eighty yards away. Since then I have given my *protégés* a wide berth after sunset. A similar instance is recorded in 'The Zoologist' for 1888, p. 351.—JULIAN G. TUCK (Tostock Rectory, Bury St. Edmunds).

Notes on Birds' Nests.—On April 26th I found a Pied Wagtail's nest with one egg in an ivy wall in our garden, and visiting it on May 1st was surprised to find nine eggs, evidently the produce of two birds. The nest now contains ten eggs. Last winter I had an old beech stump, about eight feet long, sawn off, in which there was a Woodpecker's hole, occupied last year by Starlings. This has been planted in the ground near the

house, with the hole reduced in size so as to exclude the Starlings. One day a Lesser Spotted Woodpecker was hard at work at the hole, but since then a pair of Wrynecks seem to have taken possession. Some Nuthatches are occupying a nesting-box nailed to the trunk of a Scotch fir, close to the window where I write; they hatched off in the same place last year; the nest, so far as it is visible, is entirely made of thin flakes of the bark of the tree. We have also three Tits' nests in boxes: one in an inverted flower-pot placed on a wall; one in a drain-pipe, with the ends blocked up and a hole bored in the side, laid in ivy on a wall; and one in a hollow block of elm, taken from a fernery and placed on end, with a flat stone laid on the top, and an entrance hole cut in the side. A pair of Redstarts are nesting in one of the boxes. Probably more birds would breed in the artificial nesting-places were it not for the number of old decayed beech trees around the house, which contain any amount of suitable holes. It would be a pleasure to me to show the nests above mentioned to any of the readers of 'The Zoologist' who may be in this neighbourhood, and would like to see them.—JULIAN G. TUCK (Tostock Rectory, Bury St. Edmunds).

Food of the Pine Grosbeak.—It is generally supposed that the Pine Grosbeak feeds on the seeds of Coniferæ, apparently because it inhabits pine forests, but I do not think its bill is adapted for opening fir-cones, or for extracting the seeds from them. Bullfinches eat the buds of the larch in spring, and perhaps the Pine Grosbeak may eat the buds of the pine at one season of the year. In the winter of 1856-7 I was residing in Montreal, Canada, and observed large flocks of Pine Grosbeaks and Bohemian Waxwings, which frequented the gardens around that beautiful city. The winter was very severe, the thermometer falling as low as - 31°. The birds were feeding on the berries of the mountain ash, *Pyrus americana*, and high cranberry bush, *Viburnum opulus*. I shot many specimens of both species that winter, and of the Pine Grosbeak in the following one. It was interesting to notice the difference in the mode of feeding of the two birds; the Grosbeak, having a strong bill, crushed the frozen berries of the mountain ash, rejecting the skins, which were scattered in great quantities over the snow beneath the trees they frequented, and swallowed only the pulp and pips or seeds, the latter to be comminuted by the action of the hard muscular gizzard aided by the small stones that were always present. The pips thus ground up communicated a strong odour of prussic acid to the whole body. The Waxwings having a weak bill, capacious œsophagus, and soft membranous stomach, swallowed the berries whole and unbroken, and when they thawed the pips passed out of the body without having undergone any change by the process of digestion, and imparted no smell to the flesh, the fruity portion alone being retained for the nourishment of the bird. There was a considerable amount of orange-coloured fat on the bodies

of the Grosbeaks. It had a very pretty effect, the two hardy species feeding together, picking off the bright red berries—the Grosbeaks clinging to the branches back downwards like Parrots. The flocks of Grosbeaks consisted almost entirely of dull-coloured individuals, females or young birds, and there were only two or three old males in their handsome red plumage. They were so tame that it was sometimes difficult to avoid blowing them to pieces by discharging the gun too close to them. They disappeared about the middle of March. The Waxwings remained until the end of April, and when other food was exhausted they fed on the berries of the cockspur thorn. They were much more wary than the Grosbeaks and more difficult to approach. It appears to me to add greatly to the improbability of a "fine red male Pine Grosbeak" having occurred in Devonshire, that so few individuals are met with in red plumage, it being old cock birds that assume the finest plumage. It is also more likely that young birds would visit England than old ones.—W. S. M. D'URBAN (10, Claremont Terrace, Exmouth).

Nesting Habits of the Sky Lark.—I send you a query, and shall be much obliged to you if you will insert it in 'The Zoologist.' I have noticed this season a rather singular thing with regard to the nesting of the Sky Lark, *Alauda arvensis*, which may or may not be confined to this district; all the Sky Larks' nests which have come under my notice this year have had but three eggs. I have only seen some four or five myself, but several of my friends who take an interest in Ornithology have remarked the same peculiarity to me. From a rough calculation I find that out of about eighteen nests that have come under my notice, only two have had four eggs, and one nest two eggs; the rest have all contained but three, and not one have I heard of that contained five. Now, so far as my experience goes, the Sky Lark generally lays five eggs, sometimes but four, and only exceptionally ceases laying at three. I should much like to know if any other readers of 'The Zoologist' have remarked a similar anomaly in the nidification of the Sky Lark. While out for a walk with a friend this season, on April 20th, I found a Sky Lark's nest with one egg in it: thirteen days after I happened to be close to the spot with the same friend, so we thought we would go to see if the nest was all right. I was much surprised to find that the nest—unmistakably the same—contained three young birds, which had apparently been hatched about twenty-four hours. Now allowing that the bird laid one egg per day, and had not laid upon the day on which I found the nest (about 2.30 p.m.), the period of incubation could not possibly have been more than eleven days, which seemed to me a remarkably short time; so on arriving home I looked up the length of the period of incubation for the Sky Lark in the first edition of Yarrell's 'British Birds,' and found that he gave it as fifteen days. Mr. Howard

Saunders, in his 'Manual of British Birds,' also gives it as fifteen days. Now I should think that the period of incubation could hardly vary so much as four days in any one species. This being so, either this Lark must have played me a trick, or else Messrs. Yarrell and Saunders have erred in their statement. Perhaps some reader of 'The Zoologist' can enlighten me as regards the variation in the period of incubation in the Sky Lark.—A. M. LAWS (Thetford).

Shore Lark in Lincolnshire.—A fine specimen of the Shore Lark was shot at a marsh village, North Somercotes, on the 11th of February last. It was preserved by Mr. Kew, of Louth, and is now in my possession. Has it been before recorded from Lincolnshire? Mr. Cordeaux does not mention one in his 'Birds of the Humber District' (1872).—HENRY F. ALLISON (Beckingham, Newark).

[Yes; Mr. Cordeaux mentions several instances of its occurrence in Lincolnshire in winter and spring in the work referred to (p. 45), and believes that it occurs more frequently on the east coast than is generally suspected.—ED.]

Red-necked Grebe in Surrey.—A Red-necked Grebe, *Podiceps rubricollis*, was picked up dead in this neighbourhood in April last. It was a male in good plumage, and appeared to have been badly shot in both wings.—E. P. LARKEN (Gatton Tower, Reigate).

Increase of Jack Snipe in North Lincolnshire.—The Jack Snipe was fairly plentiful in this parish during last winter, 1889-90,—more so, I am inclined to think, than its larger relative the Common Snipe. In this district it is now considered by old gunners to be a rare bird, and one that is gradually getting scarcer every year. Compared with what it was twenty or thirty years ago, no doubt this is true, but after four or five seasons' shooting I am led to the conclusion that it is not so scarce as supposed (its habit of lying close no doubt often stands it in good stead), but, on the contrary, is gradually increasing. I have frequently flushed two and three couple of "Jacks" from one small reed-bed in this parish,—a favourite haunt of Snipe. There are certain localities—such as a patch of reeds or a particular tuft of rushes—that always hold a "long bill" or two, no matter, shoot them as you will. Whether this apparent increase of the "Jack" is owing to the decrease of the Common Snipe I am unable to say. Has any other reader noticed a similar increase in the Humber district?—J. W. HARRISON (Goshill, Lincolnshire).

Thick-knee in Hertfordshire.—Our local birdstuffer, Mr. Reeves, showed me a Thick-knee which had been picked up dead in Hertfordshire in April, and forwarded to him in the flesh. It appears to have come to its death by flying against some telegraph-wires.—E. P. LARKEN (Gatton Tower, Reigate).

SCIENTIFIC SOCIETIES.

LINNEAN SOCIETY OF LONDON.

May 1, 1890.—Mr. J. G. BAKER, F.R.S., Vice-President, in the chair. The Rev. J. Tait Scott was admitted; and Messrs. J. H. Garrett and John Young were elected Fellows; Dr. E. von Regel, of St. Petersburg, and Mr. Sereno Watson, of Harvard University, Cambridge, Mass., being elected Foreign Members.

Mr. Miller Christy exhibited and made remarks on specimens of the so-called Bardfield oxlip, which he had found growing abundantly not only in the neighbourhood of Bardfield, Essex, but over a considerable area to the north and west of it.

Mr. Buffham exhibited under the microscope specimens of *Myristrichia claviformis* with plurilocular sporangia, and conjugation of *Rhabdomena arcuatum*, found upon *Zostera marina*.

The Rev. Prof. Henslow exhibited a collection of edible Mollusca, which he had recently brought from Malta, and described the native methods of collecting and cooking them.

Prof. Stewart exhibited some spirit specimens of a Lizard, in which the pineal eye was clearly apparent.

Mr. Sherring exhibited a series of excellent photographs, which he had taken near Falmouth, and which showed the effects of climatic influence on the growth of several subtropical and rare plants cultivated in the open air.

A paper was then read by Prof. W. Fream, "On a quantitative examination of Water-meadow Herbage." This was followed by a paper from Mr. R. I. Pocock, "On some Old World species of Scorpions."

ZOOLOGICAL SOCIETY OF LONDON.

May 6, 1890.—Prof. W. H. FLOWER, C.B., LL.D., F.R.S., President, in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of April, and called special attention to two examples of Simony's Lizard, *Lacerta simonyi*, from the rock of Zalmo, Canaries, obtained by Canon Tristram, and presented to the Society by Lord Lilford.

Mr. Sclater exhibited and made remarks upon the stuffed head of an Antelope, shot by Commander R. A. J. Montgomerie, R.N., of H.M.S. 'Boadicea,' in June, 1889, near Malindi, on the East-African coast, north

of Zanzibar. Mr. Sclater referred this head to what is commonly called the Korrigum Antelope, *Damalis senegalensis*.

Prof. Howes made remarks on a dissection of the cephalic skeleton of *Hatteria*, and pointed out some features of special interest exhibited by this specimen. These were the presence of a pro-atlas and the existence of vomerine teeth, as in *Palaeohatteria*.

Two letters were read from Dr. Emin Pasha, C.M.Z.S., dated Bagamoyo, March, 1890, and announcing that he had forwarded certain zoological specimens for the Society's acceptance.

Mr. H. Seebohm exhibited and made remarks on a specimen of the Eastern Turtle, *Turtur orientalis*, killed near Scarborough, in Yorkshire, in October, 1889.

Prof. F. Jeffrey Bell read the first of a series of contributions to our knowledge of the Antipatharian Corals. The present communication contained the description of a particularly fine example of the Black Coral of the Mediterranean, and an account of a very remarkable Autipathid from the neighbourhood of the island of Mauritius.

A communication was read from Mr. E. N. Buxton, containing notes on the Wild Sheep and Mountain-Antelope of the Algerian Atlas, taken during a recent excursion into that country. These notes were illustrated by the exhibition of fine mounted specimens of the heads of these animals.

Mr. R. Lydekker read a note on a remarkable specimen of an antler of a large deer from Asia Minor, which he was inclined to refer to an abnormal form of the Red-deer, *Cervus elaphus*.

Mr. F. E. Beddard read a paper on the minute structure of the eye in some shallow-water and deep-sea species of the Isopod genus *Arcturus*. He pointed out that in all the deep-sea forms there was some change in the visual elements which indicated degeneration.

Mr. E. T. Newton gave an account of the bones of some small birds obtained by Prof. Nation from beneath the nitrate beds of Peru. These bones seemed to occur in considerable abundance, and nearly all appeared to belong to one small species of Petrel, which it was thought most nearly resembled *Cymochorea leucorrhoa* or *C. markhami*, the latter of these being now found living on the coast of Chili.

A communication was read from Dr. Mivart, containing notes on some singular Canine dental abnormalities.

Mr. H. Elwes read descriptions of some new Indian Moths.

May 20.—Prof. W. H. FLOWER, C.B., LL.D., F.R.S., President, in the chair.

Mr. Gambier Bolton exhibited a series of photographs, principally of animals living in the Society's Gardens and in Mr. W. Rothschild's Menagerie.

Prof. Flower exhibited a photograph of a nest of a Hornbill (*Toccus*)

melanoleucus), taken from a specimen in the Albany Museum, Grahamstown, in which the female was shown "walled in."

A communication was read from Sir Edward Newton relating to the reported discovery of Dodo's bones in Mauritius in 1885, by the late Mr. Caldwell. It appeared that there had been some error in the matter, and that the bones discovered were not those of the Dodo.

Mr. Sclater pointed out the characters of a new Toucan of the genus *Pteroglossus* from the Upper Amazons, proposed to be called *P. didymus*.

Mr. R. Lydekker read a paper describing some bird-remains from the cavern-deposits of Malta. These remains indicated a Vulture larger than any existing species, which, from the characters of the cervical vertebrae, he referred to the genus *Gyps*, under the name of *G. melitensis*. They also comprised some bones of a Crane, of the size of *Grus antigone*, for which the name *Grus melitensis* was proposed.

Dr. Hans Gadow gave an account of some cases of the modification of certain organs in mammals and birds which seemed to be illustrations of the inheritance of acquired characters.—P. L. SCLATER, *Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON.

May 7, 1890.—Capt. HENRY J. ELWES, F.L.S., Vice-President, in the chair.

Messrs. W. G. Blatch, F. J. S. Chatterton, Charles Fenn, and George B. Routledge were elected Fellows; and Mr. A. E. Stearns was admitted into the Society.

The Secretary read a letter from the Vicar of Arundel, asking for advice as to the course to be taken to get rid of the larvæ of a beetle which were destroying the beams of the Parish Church. Mr. C. O. Waterhouse said he had already been consulted on the question, and had advised that the beams should be soaked with paraffin oil.

Dr. Sharp exhibited specimens of *Caryoborus lacerda*, a species of *Bruchidae*, and the nuts from which they had been reared. He stated that three of these nuts had been sent him from Bahia by the late Senor Lacerda, about six years ago; that one of the beetles had effected its exit from the nut during the voyage; a second had recently emerged, after the nuts had been in this country for five years; and that a third had undergone its metamorphosis and died within the nut. Dr. Sharp also exhibited several specimens of Diptera collected by Mr. Herbert Smith in St. Vincent, and read a letter from him to Mr. Godman on the subject of the vast number of species of this order which he had recently collected in that island. Mr. M'Lachlan, Dr. Mason, Mr. Waterhouse, and Capt. Elwes took part in the discussion which ensued.

Mr. R. F. Lewis, on behalf of Mr. W. M. Maskell, of Wellington, New Zealand, exhibited and read notes on about twenty-five species of *Coccidae* from that colony. He also exhibited some specimens of the larvæ and imagos of *Icerya Purchasi*, Maskell, obtained from Natal, where the species had proved very destructive to orange, lemon, and other fruit trees. He also showed specimens of the larvæ of an allied species from Natal, originally assigned by Mr. Douglas to the genus *Ortonia*, but which Mr. Maskell was inclined to regard as a new species of *Icerya*. Mr. M'Lachlan and the Chairman commented on the interesting nature of the exhibition, and the importance of a knowledge of the parasites of injurious insects, in connection with which special mention was made of the researches and discoveries of Prof. Riley.

The Secretary exhibited, on behalf of Mr. T. D. A. Cockerell, of Colorado, a large collection of insect-galls, and read a letter from Mr. Cockerell on the subject. Dr. Mason said he should be happy to take charge of these galls, with a view of rearing the insects and reporting the results.

Mr. H. W. Bates communicated a paper entitled "On new Species of *Cicindelidae*."—H. Goss, Hon. Sec.

NOTICES OF NEW BOOKS.

Our Cats: and all about them. Their Varieties, Habits, and Management, and, for show, the standard of excellence and beauty described and pictured. By HARRISON WEIR, President of the National Cat Club. Post 8vo, pp. 248. Tunbridge Wells: Clements & Co.

MR. WEIR is an enthusiast, and as President of the National Cat Club (which in conjunction with Messrs. Wilkinson and Wilson, of the Crystal Palace, he originated twenty years ago) knows more than most people on the subject of the domestic Cat and its varieties. The result of his experience is embodied in the present volume, and although the materials which he has collected are perhaps not so skilfully arranged as they might have been, his book is, nevertheless, very pleasant reading. On the question of origin (which we should have expected to see dealt with on page 1 instead of on page 164), we are disappointed at not having a definite expression of Mr. Weir's own opinion, instead of a statement of the views of others, although we infer from the extracts quoted, that he endorses the notion that the

domestic Cat is not descended from any one wild species, but from several in different countries, and at different periods of the world's history.

Commencing with an account of the first Cat Show, and a chapter on the habits generally of the feline race, Mr. Weir discusses *seriatim* the various breeds of the domestic Cat, with characteristic figures of each drawn by himself.

The most curious of these are, the so-called *Archangel Blue Cat*, in Mr. Weir's opinion not a distinct breed, but a light coloured form of the black Cat, with the fur of a bluish lilac tint, with no sootiness or black about it, the nose and paws dark, and the eyes orange-yellow; the *Siamese Cat*, white, with the ears and lower part of face black; another variety, having the body of a dun colour, nose, part of the face, ears, feet, and tail, of a very dark chocolate-brown, nearly black; eyes of a beautiful blue by day, and of a red colour by night! and the *Manx Cat*, whose chief characteristic is that it is tail-less. It is popularly believed that all Cats in the Isle of Man are tail-less, but this, it appears, is not so. Mr. Weir says that there, as elsewhere, tails of all lengths may be seen "from nothing up to ten inches." Twenty-four pages are occupied with an enumeration of the points by which Cats are judged, and by breeders and exhibitors this portion of the book will probably be regarded as the most useful. This is succeeded by half-a-dozen pages on the diseases of Cats, and their remedies, and the volume concludes with a collection of scraps relating to Cats, from various sources, some of which we should have thought too trivial to be worth notice. "Cat Proverbs," the "Cat of Shakespeare," "Superstition and Witchcraft," "Weather Notions," and "Inn Signs," are some of the titles to the chapters.

Mr. Harrison Weir has certainly displayed much industry in collecting every scrap of information he could find relating to the domestic Cat, and whether the reader be an intending exhibitor, anxious to know the points of a particular breed which he possesses, or merely the contented owner of an ordinary mouser, he will find in this little volume something to interest and amuse him. Let him by no means omit to read (p. 18) the story of the Deaf Cat, a capital story which has the additional merit of being true.

Classification of Birds: an Attempt to diagnose the Subclasses, Orders, Suborders, and some of the Families of existing Birds.
By HENRY SEEBOHM. 8vo, pp. 53. London: R. H. Porter.
1890.

THIS is an attempt to classify existing Birds in groups which are capable of being diagnosed, and represents an enormous amount of labour. In little more than fifty pages Mr. Seebohm has set down the well-considered results of his examination of the Osteology, Myology, and Pterylography of as many forms as it was possible to examine, bearing in mind that many species are known only from skins forwarded by collectors, and their affinities consequently can be only surmised from external characters.

We infer, however, from his diagnoses, that he has been able to see either freshly killed or spirit specimens representative of every one of the suborders named by him, and probably representatives of most of the families belonging to these suborders which are thirty-six in number.

In selecting characters he has been careful, as he states in his Introduction, to choose those which are supposed to denote affinity,—in other words to be due to inheritance from common ancestors; and so far as possible to avoid such as only denote analogy, that is to say such as are only instances where like causes have produced like effects.

It is, however, very difficult to tell which characters have been inherited and which have been independently acquired. In many cases it is only possible to guess, in others it is absolutely impossible to form any opinion at all. It may, perhaps, be fairly assumed that the more complicated a character is, the less chance is there that it can have been independently acquired by two groups. It may also be taken for granted that it is very much more difficult even for a simple character to be independently acquired than to be independently lost.

To ascertain then whether a given character denotes affinity, or even analogy, is the first difficulty of classification; the second being to ascertain the relative value of the different characters.

On this point, unfortunately, no rule can be laid down, though, as Mr. Seebohm remarks, there are certain laws which govern

the operation of classification by diagnosis. It is in the application of these principles that the value of Mr. Seebohm's work lies.

In each group as diagnosed by him we find a combination of characters not to be found in any other group; in other words, characters which are diagnostic of that group alone. The linear arrangement, therefore, which he has adopted in setting down the names of these groups (beginning with the *Passeres* and ending with the *Struthiones*) is of secondary importance, because the order in which they are named may be altered in accordance with the views of the reader without affecting the constitution of the groups themselves.

The great point is to be able to write down an unfailing diagnosis for each so-called "Suborder," and then to group these in a smaller number of "Orders;" the larger division of "Sub-classes" (such as *Passeriformes*, *Falconiformes*, *Anseriformes*, &c.) we are inclined to regard as unnecessary. Indeed we would go a step further, and for the sake of simplicity abandon the names of Mr. Seebohm's "Orders," and apply that classificatory term to his "Suborders." With the "Class" Aves divided into thirty-six "Orders" (Mr. Seebohm's "Suborders"), each having its component "Families," comprising allied "genera," or groups of "species," we should have a sufficiently detailed classification, and get rid of such practically superfluous terms as "Sub-class," "Sub-order," "Sub-genus," and "Sub-species."

The traveller who has a few broad landmarks to guide him in the exploration of a country hitherto untraversed by him, stands less chance of losing his way than if he attempts to carry out a multiplicity of minute directions which can only tend to confuse him. So it must be with the student of Zoological Classification. For teaching purposes the simpler the scheme of classification the better. Details may be filled in afterwards.

A Handbook of European Birds, for the use of Field Naturalists and Collectors. By JAMES BACKHOUSE, Junior. Small 8vo, pp. 334. London : Gurney & Jackson. 1890.

IT was a happy thought on the part of Mr. Backhouse to plan a Handbook of European Birds in one volume. There was a distinct opening for such a work, and English visitors to the Continent would be especially grateful for a good guide on this subject. But the book which Mr. Backhouse has written is not,

we fear, the sort of book which they require, or at least, which is likely to be most useful to them.

The very first information which the travelling Ornithologist will need if he does not already possess it, is the name by which a bird is known in the country visited. Without this knowledge he cannot begin to make enquiry concerning it with any chance of being understood. Mr. Backhouse should certainly have given us the French, German, Spanish, and Italian names for all the commoner kinds of birds, and these might have been easily ascertained on reference to Schlegel's 'Revue Critique,' Col. Irby's 'Ornithology of the Straits of Gibraltar,' and Prof. Giglioli's 'Avifauna Italica.'

Having learnt the local name of a species, the next thing to be ascertained is where to look for it with some chance of success. This information also is not supplied by Mr. Backhouse; that is to say, his definition of a birds' "distribution" is so wide as to be practically useless to the inexperienced reader for whom his book is intended.

Let us suppose, for example, that the collector is in France, or Switzerland, for a summer vacation, and anxious to see some particular species which is rarely met with in the British Islands, though, perhaps, common enough in summer in many parts of the Continent. Looking to this pocket-guide for some hint as to its distribution, he finds the statement that it "breeds in Central and Southern Europe, wintering in Africa," a generalization with which he is probably already familiar.

Again, to take the case of a traveller seeing for the first time a bird with which he is unacquainted. On enquiry he learns the local name, and if that were given in the 'Handbook,' he would have no difficulty in finding a description of it; but in the absence of such a clue, how many descriptions must be read through before the bird seen can be identified and named, perhaps, even then with some feeling of doubt.

Mr. Backhouse's descriptions of the species, however, are good so far as they go; the adult in summer, adult in winter, and the young bird being described; the difference, if any, between the sexes being also noted, and approximate measurements given.

The book is printed in good clear type, and should the reader be unfamiliar with the classification, he may easily find on reference to the Index any species of which he may be in search.

